REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action December 10, 2004. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 6-10, 12, and 14-21 are under consideration in this application. Claims 1-5, 11 and 13 are being cancelled without prejudice or disclaimer. Claims 6-10 and 12 are being amended, as set forth above and in the attached marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim Applicants' invention. New claims 14-21 are being added to recite other embodiments described in the specification.

The claims are being amended to correct formal errors and/or to better disclose or describe the features of the present invention as claimed. All the amendments to the claims are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Prior Art Rejections

Claims 1 - 13 were rejected under 35 U.S.C. §102(e) on the grounds of being anticipated by US Patent No. 6,649,138 to Adams et al. (hereinafter "Adams"). The Examiner relied upon the prior art described in Adams (col. 2, lines 9-23) to teach "Cd(OH)2 -capped CdS sol (col. 2, line 18)" (p. 3, lines 1-5 of the outstanding Office Action). The 1987 article by Spanhel et al. (hereinafter "Spanhel") was not yet directly cited against this application but which was made of record in the Form PTO-892. This rejection has been carefully considered, but is most respectfully traversed.

The method for producing semiconductor nanoparticles (p. 7, 3rd paragraph to p. 10, 1st paragraph), as now recited in claim 6, comprises : stabilizing a plurality of semiconductor nanoparticles in a solution; (e.g., "The semiconductor nanoparticles which have been already stabilized with hexametaphosphoric acid are already present in the solution *...standard deviations reach up to 15% or more*" p. 8, lines 12-14); irradiating the semiconductor nanoparticles with light to photo-dissolve semiconductor nanoparticles with

undesirable diameters therefrom thereby extracting semiconductor nanoparticles of a predetermined average size and a predetermined deviation; (e.g., "*to precisely separate and extract only the semiconductor nanoparticles of a specific particle size from semiconductor nanoparticles having a wide distribution of particle sizes immediately after preparation in order to attain monodispersed distributions.....only the semiconductor nanoparticles of larger particle sizes to be selectively photoexcited and dissolved, thus sorting the semiconductor nanoparticles into smaller particle sizes*" p. 8, last paragraph; "*Variation of the wavelength of this monochromatic light can regulate the fluorescence wavelength at the peak in the fluorescence emission spectrum of the semiconductor nanoparticles.*" P. 9, lines 9-11); ***chemically modifying*** surfaces of the **extracted** semiconductor nanoparticles obtained from the irradiating step with a thiol compound **thereby forming a complex** ("forming a complex" p. 8, lines 3-4; p. 10, line 1); and reacting a compound having a hydroxyl group with the modified surfaces of the semiconductor nanoparticles thereby binding a group -OY to the modified surfaces of the semiconductor nanoparticles for stabilization, Y being selected from a hydrogen atom, a metal atom, a semimetal atom, an organic group, or an organic group that is intermediated by a metal atom or a semimetal atom (recited in the original claim 1).

Applicants respectfully contend that neither Adams nor Spanhel teaches or suggests (1) "irradiating the semiconductor nanoparticles with light to photo-dissolve semiconductor nanoparticles with undesirable diameters therefrom thereby extracting semiconductor nanoparticles of a predetermined average size and a predetermined deviation"; or (2) "*chemically* modifying surfaces of the extracted semiconductor nanoparticles obtained from the irradiating step with a thiol compound thereby forming a complex" according to the invention.

First of all, Adams and Spanhel both fail to mention any teaching or suggestion regarding "photo-dissolving semiconductor nanoparticles with undesirable diameters," i.e., "size-selective photoetching (p. 8, last paragraph) thereby extracting semiconductor nanoparticles of a predetermined average size and a predetermined deviation" according to the invention. Spanhel only states that the grain diameters change depending on PH, rather than obtained by photo-dissolving.

Secondly, Adams, at most, merely modifies surfaces of general semiconductor nanoparticles with a thiol compound (p. 4, paragraph No. 15 of the outstanding Office Action), rather than surfaces of the unique semiconductor nanoparticles obtained from the novel irradiating step according to the invention.

Thirdly, Spanhel's "Cd(OH)2 -capped CdS sol" has Cd^{++} "laminated" on the surfaces of the semiconductor nanoparticles, rather than "chemically modifying" the surfaces of the semiconductor nanoparticles.

Lastly, Applicants respectfully contend that one skilled in the art would not be motivated combine Spanhel teaching of "Cd(OH)2 -capped CdS sol" with Adams' teaching of "modifying surfaces of semiconductor nanoparticles with a thiol compound" since Adams specifically criticizes the shortcomings of PH dependency of Spanhel's "Cd(OH)2 -capped CdS sol" (col. 2, lines 20-24) which discourages one skilled in the art to contemplate the combination as suggested by the Examiner.

Accordingly, Applicants contend that the suggested combination does not embody each and every feature of the present invention as now claimed in claim 6 from which claims 7-10, 12, and 14-21 depend. The difference is more than sufficient that the present invention as now claimed would not have been rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Conclusion

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

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